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EXAMINER

HAGEMAN, MARK

ART UNIT

PAPER NUMBER

3653

MAIL DATE

DELIVERY MODE

03/25/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/536,960

Applicant(s)

GARRETT ET AL.

Examiner

Mark Hageman

Art Unit

3653

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 March 2008.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
4a) Of the above claim(s) 1-14 and 24-26 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 15-23 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 5-31-2005
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

1. Applicant's election of claims 15-23 in the reply filed on 3-7-2008 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 15, 20, and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 15 recites "the rod having a minimum radius of curvature at any point between said spaced ends which is greater than said predetermined wavelength." This renders the claim indefinite as it is unclear what "at any point between..." means. It seems that the claim intends to mean that the radius of curvature of every point along the rod is great than the wavelength. Examiner contends that as written this relationship would only need to be true at a single point to meet the "at any point" recitation as claimed.

4. Claims 20 recites the limitation "said excitation source" in lines 1-2. There is insufficient antecedent basis for this limitation in the claim. It is unclear what structure is

being referred to and if the transducer, resonator...etc. are in addition to those already claimed or refer to structure already set forth. Claims 20 and 21 have not been further treated at this time as it is not possible to determine the scope of the claims.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 15 and 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by US 5,653,346 to Frei et al. Frei discloses a base (figure 20); a sieve screen frame mounted on the base (20); a separator screen (18) mounted in the frame; a vibrator (72) arranged to vibrate the frame relative to the base; a resonator secured to or contacting the separator screen (14, 16), wherein the resonator comprises a rod (16) extending between spaced ends; an ultrasonic transducer (10) at one of said spaced ends to excite the resonator rod at a resonant frequency having a predetermined wavelength along the length of the resonator rod; said resonator rod having at least a portion of its length which bends smoothly in a single direction of curvature through at least 90° (figure 18) , and the rod having a minimum radius of curvature at any point between said spaced ends which is greater than said predetermined wavelength. Examiner contends that the relationship of the radius of curvature to the wavelength is functional as the wavelength only exists when the device is in use and being oscillated at a

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specific frequency. The Frei device can operate over a range of frequencies and would be capable of operating in a regime where the relationship is true.

Re claim 17 said predetermined wavelength is between 25 mm and 35 mm (c5 lines 1+). Further similar to claim 15 examiner contends that this limitation is functional and Frei could operate in this regime.

Re claim 18 wherein said rod bends in said single direction of curvature, over at least a portion thereof, by at least 180° (figure 18).

Re claim 19 the sieve further comprises a support frame (58) beneath the sieve screen.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Frei. Frei does disclose a plurality of resonator rods (figures 18, 21, 24). Frei fails to explicitly disclose said minimum radius of curvature is greater than 50 mm and each of said plurality of resonator rods having a respective ultrasonic transducer at one end

of the rod. Frei does disclose various dimensions that provide an overall size or scale of the parts involved in the machine (figures 3 and 5 and c4-5).

It would have been obvious to one of ordinary skill in the art at the time of the applicants' invention to have sized the parts such that the minimum radius of curvature is greater than 50 mm because it would naturally occur in building the machine. Furthermore Frei shows multiple embodiments some with straight rods and others with curved rods. Therefore a range of different values for radius of curvature are readily obvious to one of ordinary skill in the art.

Frei discloses using a single transducer to resonate multiple rods via tuned sound conductors (figure 18 and 24 and c6 lines 30+). It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize multiple transducers, one associated with each rod, rather than the single transducer and sound conductors as the use of multiple transducers is well known in the art, as evidenced by the Alamazad and Slesarenko documents cited on the 892, for the predictable result of imparting vibrations to the screen.

Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Frei in view of US 6,079,569 to Monteith. Frei fails to disclose the curvature of the rod varies over the length of the rod between the ends. Monteith discloses a similar system for imparting vibrations to a screen which includes the curvature of the rod varies over the length of the rod between the ends (figures 1 and 8).

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have modified Frei to include the Monteith system with the curvature of the rod varying over the length of the rod between the ends for the predictable result of the imparting vibration to the screen mesh.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mark Hageman whose telephone number is (571) 272-3027. The examiner can normally be reached on M-F 7:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Mackey can be reached on (571) 272-6916. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Patrick H. Mackey/
Supervisory Patent Examiner, Art
Unit 3653

MCH